

Exploring Biological Matter with Micro- and Nanodiffraction

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The feasibility of protein crystallography with an about 1µm beam has recently been demonstrated at the ESRF ID-13 beamline in collaboration with MRC-Cambridge (UK). Instrumentation used for protein microcrystallography resembles in many respects to techniques such as scanning diffraction or scanning small-angle scattering which are extensively used to study hierarchically organized biological matter. In my talk I will trace back the origin of these techniques to two beamline proposals defined at the onset of the ESRF. Current instrumental efforts are particularly dedicated to the development of routinely useable nanobeams for studying biological specimens by diffraction techniques. I will also discuss the development of advanced sample environments capable of positioning biological objects –such as protein crystals- in micro- or nanobeams.